AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 4, line 9 as follows:

Typical sliders, including air bearing surfaces, have sharp corners and edges. One drawback of having an air bearing surface with sharp edges and corners is that during the contact start or stop, the sharp edges of the air bearing surface may cause deformations on the surface of the disk as the slider is being lifted off or placed onto the disk surface. One approach to reduce the amount of damage resulting from the slider-to-disk contact is to round the edges of the air bearing rails as shown in U.S. Patent No. 4,928,195 to Ezaki et al. or to provide air bearing rails with beveled edges as shown in U.S. Patent No. 5,301,077 toYamaguchi et al. In addition, U.S. Patent No. 5,872,686 to Dorius et al. describes an improved slider having rounded corners to minimize disk damage. In short, <u>by</u> rounding or beveling the air bearing rail edges, unwanted wear of the disk surface is reduced.

Please amend the paragraph beginning on page 4, line 19 as follows:

Rounded or beveled corners may be produced through mechanical material removal processes such as using cutting <u>by</u> ~~to~~ abrasion means or through laser ablation in which high intensity light <u>is</u> used to evaporate material from sliders edges and corners. However, these processes only allow a few slider heads to be formed at a time <u>and</u> are thus economically infeasible. U.S. Patent 5,997,755 to Sawada, as another example, describes a method of manufacturing a transducer with rounded corners. The patent describes an air bearing surface (ABS) and a second surface having edges at peripheries thereof formed by etching a disk-facing plane of a transducer slider. The disk-facing plane of the slider is coated with liquid resin, which is then dried. Due to surface tension effects, the resin thickness is thinner at the corners than the other portions of the ABS. After ion bombarding milling particles to the disk facing plane, the corners of the sliders are rounded. It should be evident that this method offers little if any control of the profile of the resin, and thus the corner rounding cannot be determined. Furthermore, this process is not adaptable for ABS pad edge blending.

Please amend the paragraph beginning on page 11, line 12 as follows:

In one aspect, then, the invention relates to a method for producing a transducer slider. The method involves first coating a substrate with a radiation-sensitive layer, preferably a photosensitive layer. The radiation-sensitive layer is exposed ~~to layer~~ to radiation according to an intensity pattern, preferably through the use of a grayscale mask, to convert the radiation-sensitive layer into a patterned layer having a tapered edge. Then, material is etched or otherwise removed from the substrate according to the patterned layer to form a transducer slider having a surface profile comprising a tapered edge that corresponds to the tapered edge of the patterned layer.

Please amend the paragraph beginning on page 13, line 3 as follows:

FIG. 2 schematically illustrates one embodiment of the inventive method using photolithographic techniques for producing a transducer slider, particularly a magnetic head slider having a surface profile comprising a tapered edge. FIG. 2A illustrates a substrate **11** having a surface **13** on which a photosensitive layer **15** applied. As shown, the substrate **11** is generally in the shape of a rectangular block, but this is not a requirement. As the inventive method involves shaping the substrate **11** into the transducer slider by removing material from surface **13**, the substrate **11** may be composed of any material suitable for use as a transducer slider having appropriate thermal, electrical, magnetic and mechanical properties. Typically, sliders for magnetic heads are made from a hard material having a high modulus of elasticity. Such materials include ceramics such as carbides, nitrides, and oxides. Carbides such as aluminum carbide, silicon carbide, titanium carbide, boron carbide, <u>germanium</u> ~~geranium~~ carbide, tungsten carbide, and mixed-metal carbides (e.g., AlTiC or Al_2O_3TiC) are generally preferred but other materials such as titanium oxide, silicon nitride and silicon may be used as well. In addition, it is preferred that the substrate is sized to require only minimal material removal in order to form the transducer slider.

Please amend the paragraph beginning on page 14, line 15 as follows:

FIG. 2B illustrates the patterning of the photosensitive layer **15** on the substrate surface **13** by using a grayscale mask **17**. The grayscale mask **17** is patterned ~~to~~ in order to form a tapered feature in the photosensitive layer. As such, the pattern in the grayscale mask **17** has a transparent region **19**, a transition region **21** and an opaque region **23** along the direction indicated by arrow A. As shown, the optical density to the transition region **21** gradually increases from the transparent region **19** to the opaque region **23**. A source of electromagnetic radiation **25** is provided in order to generate radiation, preferably substantially collimated, having a wavelength to which the photosensitive layer **15** is responsive. Typically, the wavelength is an ultraviolet wavelength. The grayscale mask **17** is placed between the radiation source **25** and the photosensitive layer **15** in order to expose the first photosensitive layer **15** to electromagnetic radiation according to the pattern. As a result, radiation is transmitted through the transparent region **19** and the transition region **21** of the mask. Because radiation transmitted through the transparent region **19** is more intense than radiation transmitted through the transition region **21**, radiation transmitted through the transparent region **19** penetrates the photosensitive layer to a greater depth as a whole than radiation transmitted through the transition region **19**. Thus, the depth of the exposed region **27** of the photosensitive layer corresponds inversely to the optical density of the grayscale mask **17**. Similarly, the height of the unexposed regions **29** corresponds directly to the optical density of the grayscale mask **17**. As a result, the photosensitive layer is converted into a patterned layer comprising the exposed and the unexposed regions.

Please amend the paragraph beginning on page 16, line 13 as follows:

After forming the patterned layer, material is removed from the substrate according to the patterned layer to form a transducer slider having a surface profile comprising a tapered edge that corresponds to the tapered edge of the patterned layer. This is typically done by exposing the substrate to an etchant. The etchant is preferably an ionized gas such as argon-based plasma or ion beam, but may in some instances be a liquid etchant. Also preferably, the etchant is an isotropic etchant, exhibiting no difference in directional etching rate with respect to the substrate. FIG. 2D illustrates the initial exposure of the substrate and the patterned layer of FIG. 2C to an

isotropic etchant. The etchant first removes material from the exposed portion of the substrate surface **13.** However, as the etchant also removes material from the exposed portion of the patterned layer. As shown by FIG. 2D, the material removal from the substrate also undercuts the tapered edge **31** of the patterned layer **15**. FIG. 2E illustrates continued exposure of the substrate **11** and the patterned layer **15** to the etchant. It is evident that the etching process simultaneously moves material from the substrate **11** and the patterned layer **15** thereby causing "movement" of the tapered edge **31** of the patterned layer to reveal additional substrate surface for exposure to the etchant. As a result, FIG. 2E illustrates the etchant removing material from the substrate to form a surface profile comprising a tapered edge **33** that corresponds to the tapered edge **31** of the patterned layer before exposure to the etchant. FIG. 2F illustrates a final profile of the substrate after removal of the ~~teh~~ layer of photoresist.

Please amend the paragraph beginning on page 18, line 20 as follows:

The substrate may be formed by first cutting a monolithic solid member into a ~~the~~ plurality of components. When this is the case, the monolithic solid member may be cut into substantially identical components which may be then assembled in an array, preferably a rectilinear array to form the substrate. For example FIG. 4 schematically illustrates ~~illustrate~~ the formation of a substrate for use in preparing a plurality of transducer sliders using the inventive method. The substrate material may be grown or prepared in bulk, and depending on desired properties, the material may have a single crystalline, multicrystalline, or amorphous microstructure. Examples of techniques in which the substrate material may be prepared include Czochralski, float zone and other methods known in the art. FIG. 4A illustrates a monolithic solid disk **1** having an upper surface **3** that opposes a lower surface **5**. Such disks may be cut from a cylindrical crystal that typically characterize crystals grown using the Czochralski technique. FIG. 4B illustrates the sectioning of the disk **1** into a plurality of substantially identical rectangular pieces **2** that will each be formed into a transducer slider. Each piece **2** has an upper surface **2**, a lower surface **5**, two longer side surfaces **7** and two shorter side surfaces **9**. The rectangular pieces **2** are then assembled, as illustrated in FIG 4C, into a rectilinear array to form the substrate **11**. As shown, the pieces are assembled such that side longer side surfaces